CDC

July 21, 1995/ Vol. 44/ No. 28

MMWR™

MORBIDITY AND MORTALITY WEEKLY REPORT

521 Trends in Smoking Initiation Among Adolescents and Young Adults — United States, 1980–1989
525 Pertussis — United States, January 1992–June 1995
535 Pneumonia and Influenza Death Rates — United States, 1979–1994
537 Notice to Readers

Trends in Smoking Initiation Among Adolescents and Young Adults — United States, 1980–1989

The evaluation of efforts to prevent tobacco use among adolescents requires accurate surveillance of both smoking prevalence and smoking initiation rates. Although several surveillance systems provide timely data about adolescent smoking prevalence (*1*), data characterizing rates of smoking initiation among adolescents have been limited. To improve characterization of trends in smoking initiation among young persons, data from the Tobacco Use Supplement of the 1992 and 1993 Current Population Surveys (CPS) (*2*) were used to estimate smoking initiation rates for persons who were adolescents (aged 14–17 years) or young adults (aged 18–21 years) during 1980–1989. This report summarizes the results of that analysis.

The CPS are monthly surveys of the U.S. civilian, noninstitutionalized population aged ≥15 years (*2*). Approximately 56,000 households are surveyed each month; one household respondent provides information about all household members aged ≥15 years. Questions about tobacco use were added to the September 1992, January 1993, and May 1993 monthly surveys. The response rates for the three surveys were 84.7%, 84.9%, and 82.0%, respectively (N=293,543 household members). To minimize biases that could result from discrepancies between self reports and proxy reports of smoking behavior (*3*), this analysis used data from self-respondents only (82% of total sample). Ever smokers were defined as respondents who answered "yes" to the question, "Have you smoked at least 100 cigarettes in your entire life?" Ever smokers were asked, "How old were you when you started smoking cigarettes fairly regularly?" To restrict the analysis to persons who were adolescents or young adults for some period during 1980–1989, only respondents aged 17–34 years at interview were included. The final sample consisted of 71,321 persons, of whom 27,768 (38.9%) were ever smokers.

Using the age of respondents at the time of the interview and the age they reported starting smoking, the age of respondents and their smoking status were calculated for each year during the 1980s. The denominator for the initiation rate for a given year was the number of respondents at risk for initiating smoking during that year (persons already smoking were eliminated from the denominator for that year). The numerator was the number of respondents who reported initiating smoking during that year. Data were weighted by age, sex, and race/ethnicity to provide national estimates.

Among adolescents, the smoking initiation rate decreased slightly from 1980 (5.4%) through 1984 (4.7%) and then increased through 1989 (5.5%); the largest annual

Smoking Initiation — Continued

increase occurred in 1988 (Figure 1). In comparison, among young adults, initiation rates decreased throughout the 1980s (Figure 1). For both age groups, initiation rates and trends were similar for males and females.

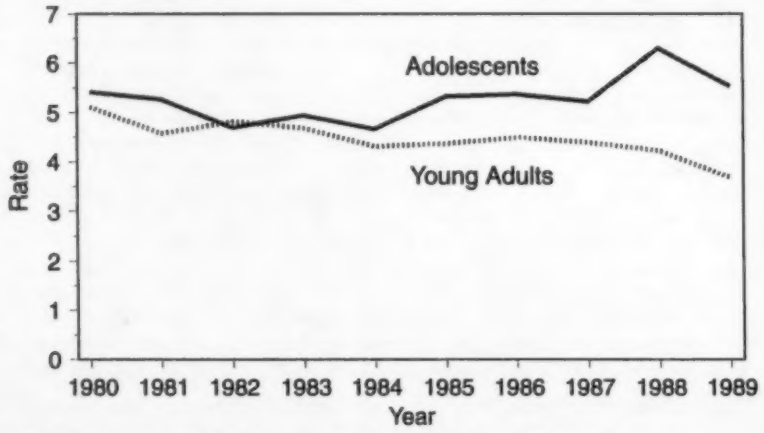
Reported by: KM Cummings, PhD, D Shah, MS, Roswell Park Cancer Institute, Buffalo, New York. DR Shopland, National Cancer Institute, National Institutes of Health. Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The findings in this report indicate an increase in the rate of initiation of cigarette smoking among adolescents from 1985 through 1989, a period during which the rate among young adults declined and overall prevalence of smoking among adults decreased steadily (*4*). One important consequence of the increased rate of initiation among adolescents will be the increased future burden of tobacco-related disease. In particular, because of the increase in initiation since 1984, an additional 600,000 adolescents began to smoke during 1985–1989.* Of those adolescents who continue to smoke regularly, approximately 50% will die from smoking-attributable disease (*5*).

Potential reasons for an increase in smoking initiation rates among adolescents include a decreased real price of cigarettes, increased levels of disposable income, increased acceptability of smoking, and intensified cigarette marketing (*1*). However, because the real price of cigarettes increased steadily during 1985–1989 and the real average weekly income among high school seniors remained stable during this period, cigarettes were less affordable to young persons (*1,6*) (Table 1). In addition, the acceptability of smoking among high school seniors did not increase: during this period there were increases in the percentages of high school seniors who believed

*Based on the assumption that the initiation rate during 1985–1989 remained stable at the 1984 rate, and by multiplying the Bureau of the Census population estimates for persons aged 14–17 years for each year from 1985 through 1989 by the difference between the adolescent smoking initiation rate in 1984 and the rate for each year.

FIGURE 1. Smoking initiation rate among adolescents and young adults,* by year — United States, 1980–1989



*Per 100 adolescents (aged 14–17 years) or young adults (aged 18–21 years).

Smoking Initiation — Continued

cigarettes are harmful, smoking is a "dirty habit," and becoming a smoker reflects poor judgment, and who reported they "mind being around people who are smoking" and would prefer to date nonsmokers (*1*).

The increase in rates of smoking initiation among adolescents during 1985–1989 may reflect increased real expenditures for cigarette advertising and promotion. The increase in rates occurred during a period when real expenditures for total cigarette advertising and promotion† doubled, and expenditures for cigarette promotion more than quadrupled (*7*) (Figure 2): from 1980 to 1989, total annual advertising and promotional expenditures (in 1993 dollars) increased from $2.1 billion to $4.2 billion, while promotional expenditures alone increased from $771 million (37% of total expenditures) to $3.2 billion (76%) (Figure 2). Promotional efforts have been highly effective among adolescents. For example, among persons aged 12–17 years in 1992, approximately 50% of smokers and 25% of nonsmokers reported having received promotional items from tobacco companies (*1*).

An association between overall cigarette marketing expenditures and initiation rates for smoking among adolescents is plausible for at least four reasons. First, brand loyalty is usually established with the first cigarette smoked (*8*); therefore, cigarette companies have an economic incentive to encourage first-time smokers to smoke their brands. Second, adolescents are exposed to cigarette advertising and promotions that employ themes and images that appeal to young persons (*1*). Third, advertising directly influences brand awareness and attitudes toward smoking among adolescents (*1*). Specifically, adolescents smoke the most heavily advertised brands,

†Based on data from the Federal Trade Commission (*7*), advertising expenditures include costs to advertise outdoors (e.g., billboards), in newspapers or magazines, and on transportation (e.g., buses); promotional expenditures include costs of promotional allowances, distribution of samples or specialty items (e.g., key chains, lighters, T-shirts, caps, and calendars), public entertainment, direct mail, coupons, retail value-added promotions (e.g., specialty items distributed at the point of sale), and point-of-sale promotions (e.g., store displays).

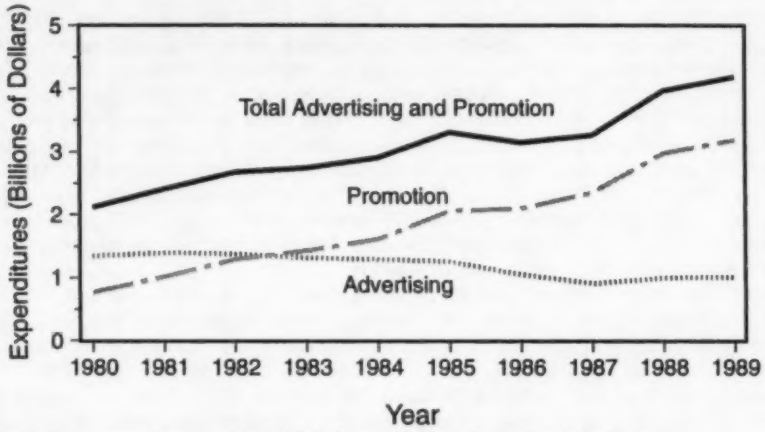
TABLE 1. Real* cigarette price per pack, real weekly income of high school seniors, and real price per pack as a percentage of real weekly income among high school seniors — United States, 1980–1989

Year	Real average cigarette price per pack (cents)†	Real average weekly income (dollars)§	Real price of cigarette pack as percentage of real weekly income
1980	72.8	NA¶	NA
1981	69.3	NA	NA
1982	72.2	52.83	1.4
1983	82.2	51.26	1.6
1984	91.1	52.00	1.7
1985	90.9	51.84	1.7
1986	95.3	53.63	1.8
1987	96.8	55.15	1.8
1988	103.3	53.53	1.9
1989	102.8	53.13	1.9

*Real prices and incomes were obtained by dividing the actual prices and incomes by the National Consumer Price Index, using the average of 1982–1984 as the reference.
†Source: The Tobacco Institute.
§Source: CDC.
¶Not available.

Smoking Initiation — Continued

FIGURE 2. Cigarette advertising and promotional expenditures* — United States, 1980–1989



*Expenditures were converted to 1993 dollars, using the Consumer Price Index.
Source: Federal Trade Commission.

and changes in brand preferences among young persons are associated with changes in brand-specific advertising expenditures (*9*). For example, the Joe Camel campaign introduced nationally in 1988 was associated with an increase in the market share of that specific brand among adolescents (*1,9*). Finally, consumer research suggests that younger persons (i.e., aged 14–17 years) aspire to be young adults (*10*); therefore, advertising and promotional efforts targeted toward young adults may have greater appeal to adolescents because of their age aspirations.

Although current estimates of smoking initiation rates among adolescents are not available, from 1991 through 1993, the national prevalence of smoking increased among eighth- and 10th-grade students (*6*). To reverse the trend of increasing smoking initiation rates among adolescents and to achieve the national health objective for the year 2000 of reducing the initiation of cigarette smoking by youth (no more than 15% should become regular smokers by age 20) (objective 3.5) (*4*), prevention efforts that focus on young persons should be intensified. Such efforts could include making cigarettes less affordable by either increasing their real price (*1*) or by limiting sales to cartons rather than individual packs, enforcing laws prohibiting the sale and distribution of cigarettes to young persons (*4*), conducting mass media campaigns to discourage tobacco use (*1*), and eliminating or severely restricting all forms of tobacco product advertising and promotion to which young persons are likely to be exposed (*4*).

References

1. US Department of Health and Human Services. Preventing tobacco use among young people: a report of the Surgeon General. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1994.

Smoking Initiation — Continued

2. Hansen RH. The Current Population Survey: design and methodology (Technical paper no. 40). Washington, DC: US Department of Commerce, Bureau of the Census, 1985.
3. Gilpin EA, Pierce JP, Cavin SW, et al. Estimates of population smoking prevalence: self versus proxy reports of smoking status. Am J Public Health 1994;84:1576–9.
4. NCHS. Health, United States, 1992, and Healthy People 2000 review. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1993; DHHS publication no. (PHS)93-1232.
5. Peto R, Lopez AD, Boreham J, Thun M, Heath C. Mortality from smoking in developing countries, 1950–2000. Indirect estimates from national vital statistics. Oxford, England: Oxford University Press, 1994.
6. Johnston LD, O'Malley PM, Bachman JG. National survey results on drug use from the Monitoring the Future study, 1975–1993. Volume I: secondary school students. Rockville, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Drug Abuse, 1994.
7. Federal Trade Commission. Report to Congress for 1990: pursuant to the Federal Cigarette Labeling and Advertising Act. Washington, DC: U.S. Federal Trade Commission, 1992.
8. DiFranza JR, Eddy JJ, Brown LF, Ryan JL, Bogojavlensky A. Tobacco acquisition and cigarette brand selection among youth. Tobacco Control 1994;3:334–8.
9. CDC. Changes in the cigarette brand preferences of adolescent smokers—United States, 1989–1993. MMWR 1994;43:577–81.
10. Teenage Research Unlimited, Inc. TRU Teenage Marketing and Lifestyle Study: wave 18, Fall 1991. Northbrook, Illinois: Teenage Research Unlimited, Inc, 1991.

Pertussis — United States, January 1992–June 1995

Pertussis was a major cause of morbidity and mortality among infants and children in the United States during the prevaccine era (i.e., before the mid-1940s). Since pertussis became a nationally reportable disease in 1922, the highest number of pertussis cases (approximately 260,000) was reported in 1934; the highest number of pertussis-related deaths (approximately 9000) occurred in 1923. Following the licensure of whole-cell pertussis vaccine combined with diphtheria and tetanus toxoids (DTP) in 1949 and the widespread use of DTP among infants and children, the incidence of reported pertussis declined to a historical low of 1010 cases in 1976 (Figure 1). However, since the early 1980s, reported pertussis incidence has increased cyclically with peaks occurring in 1983, 1986, 1990, and 1993 (*1–3*). This report summarizes national surveillance data for pertussis from January 1992 through June 1995 from CDC's National Public Health Surveillance System (NPHSS) and Supplementary Pertussis Surveillance System (SPSS) and assesses the effectiveness of pertussis vaccination in the United States during this period using vaccination coverage data from CDC's National Health Interview Survey (NHIS).

National Surveillance for Pertussis and Vaccination Coverage

Through NPHSS (formerly the National Notifiable Disease Surveillance System), state health departments report weekly to CDC the number of pertussis cases. Data reported include state and county of residence, age, date of report to CDC, and race/ethnicity. Through SPSS, more detailed information about persons with pertussis is reported to CDC, including demographic variables, vaccination history, selected clinical characteristics, hospital admission, deaths, and results of laboratory tests for *Bordetella pertussis*. Documented limitations of these pertussis surveillance systems

Pertussis — Continued

include underreporting, disproportionate representation of classic and severe cases, lack of uniform reporting criteria among the states, and reliance on laboratory diagnosis of pertussis by some states (*1*). NHIS is an annual cross-sectional household interview survey of the U.S. civilian, noninstitutionalized population (*4*). In 1992, an immunization supplement was added to the survey to collect data about vaccinations among children aged <6 years. Vaccination information was obtained from vaccination records; for children for whom no vaccination records were available (50%–65%), information was based on parental recall.

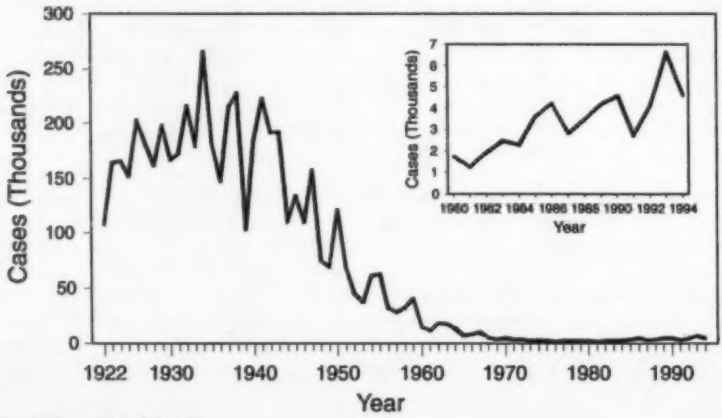
Based on NPHSS data, from 1992 through 1994, a total of 15,286 pertussis cases were reported to CDC (4083 in 1992; 6586 in 1993; and 4617 in 1994), for crude annual incidence rates of 1.6, 2.6, and 1.8 cases per 100,000 population in 1992, 1993, and 1994, respectively. Cases were reported from all 50 states and the District of Columbia. From January 7 through June 30, 1995, a total of 1386 pertussis cases were reported—an 18% decrease from the number reported during the same period in 1994 (1690).

Based on the NPHSS, during 1992–1994, of 13,615 persons reported with pertussis for whom age data were available, 5618 (41%) were aged <1 year; 2682 (20%), 1–4 years; 1551 (11%), 5–9 years; and 3764 (28%), ≥10 years. Of the children aged <1 year with pertussis, 4524 (81%) were aged <6 months.

Of 10,989 patients for whom data about vaccination status were available from SPSS, 6876 (63%) had received fewer than three doses of DTP. Of 3184 patients aged 7 months–4 years for whom vaccination status was known, 725 (23%) had received no doses, 714 (22%) had received one or two doses, and 1745 (55%) had received three or more doses. The proportion of patients who were hospitalized, had complications, or died was highest among infants and decreased with increasing age (Table 1). Of children aged <1 year reported with pertussis, 66% were hospitalized, 15% had pneumonia confirmed radiographically, and 2% had seizures. Overall, 32 pertussis-related deaths and 17 cases complicated by encephalopathy were reported.

Based on the NHIS, from 1992 through the second quarter of 1994 (the most recent period for which data were available), among children aged 19–35 months (median

FIGURE 1. Number of reported pertussis cases, by year — United States, 1922–1994*



*Data for 1994 are provisional.

TABLE 1. Number of pertussis-related hospitalizations, complications, and deaths, by age group — United States, 1992–1994

Age group	No. persons with pertussis	Hospitalized		Complications						Deaths	
				Pneumonia*		Seizures		Encephalopathy			
		No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
<6 mos	4,524	3,217	(71.1)	671	(14.8)	87	(1.9)	11	(0.2)	25	(0.6)
6–11 mos	1,094	512	(46.8)	153	(14.0)	27	(2.5)	2	(0.2)	3	(0.3)
1– 4 yrs	2,682	580	(21.6)	248	(9.2)	45	(1.7)	3	(0.1)	1	(<0.1)
5– 9 yrs	1,551	124	(8.0)	66	(4.3)	8	(0.5)	0		3	(0.2)
10–19 yrs	2,223	78	(3.5)	45	(2.0)	10	(0.4)	1	(<0.1)	0	
≥20 yrs	1,541	57	(3.7)	41	(2.7)	7	(0.5)	0		0	
Total	**13,615†**	**4,568§**	**(33.6)**	**1,224¶**	**(9.0)**	**184**	**(1.4)**	**17**	**(0.1)**	**32**	**(0.2)**

*Radiographically confirmed.
†Excludes 19 (0.1%) persons of unknown age with pertussis.
§Excludes six hospitalized patients of unknown age.
¶Excludes one hospitalized patient of unknown age.

Pertussis — Continued

age: 27 months), vaccination coverage with three or more doses of DTP or diphtheria and tetanus toxoids (DT) was 83% for 1992, 88% for 1993, 87% for the first quarter of 1994, and 90% for the second quarter. Vaccination coverage with four or more doses of DTP or DT was 59% in 1992, 72% for 1993, 67% for the first quarter of 1994, and 70% for the second quarter. Based on vaccine distribution data for 1993, 6.7% of children may have received DT instead of DTP (CDC, unpublished data, 1993).

Effectiveness of Pertussis Vaccination

The screening method (*5*) was used to calculate the effectiveness of pertussis vaccine among U.S. children aged 7–47 months during 1992–1994. Estimates of vaccine effectiveness (VE) were derived using the formula VE=1–[PCV/(1–PCV)][(1–PPV)/PPV] (PPV is the proportion of the population vaccinated, and PCV is the proportion of case-patients vaccinated). Persons who were partially vaccinated (i.e., received one to two doses of vaccine) were excluded from both PPV and PCV. Data from the national SPSS were used to determine the PCV. A case of pertussis was defined as either onset of a cough illness of any duration with isolation of *B. pertussis* from a clinical specimen or onset of an acute cough illness lasting ≥14 days plus at least one pertussis-associated symptom (i.e., paroxysms of cough, inspiratory "whoop," or posttussive vomiting) with no other apparent cause. Data from NHIS for 1992, 1993, and the first 2 quarters of 1994 were used to determine PPV for age groups 7–18 months and 19–47 months.

Compared with zero doses of pertussis vaccine, during 1992–1994, among children aged 7–18 months, VE for three doses was 85%; among children aged 19–47 months, VE for four or more doses was 94%. When these estimates were corrected by 6.7% to account for use of DT instead of DTP, VE was 64% and 82% for three doses and four or more doses, respectively.

Reported by: State and local health depts. Child Vaccine Preventable Disease Br, Epidemiology and Surveillance Div, and Assessment Br, Data Management Div, National Immunization Program, CDC.

Editorial Note: Despite the upward trend in the reported incidence of pertussis in the United States since the early 1980s, the annual numbers of cases reported during 1992–1994 represent an approximately 95% decline from those reported during the prevaccine era. Following the peak in reported cases in 1993, the numbers declined during 1994 and the first 2 quarters of 1995—a pattern consistent with the previously observed 3–4-year periodicity in pertussis incidence.

Pertussis remains an important cause of morbidity and mortality among infants and preschool-aged children. Rates of complications among infants during 1992–1994 are similar to those reported during 1980–1989 (*1*) and 1989–1991 (*2*). The two groups at greatest risk for severe complications are infants aged <6 months (the recommended age by which children should have received three doses of DTP) and preschool-aged children who are undervaccinated. The importance of timely vaccination of children is emphasized by the high proportion of undervaccination (approximately 45%) among preschool-aged children with pertussis who were age-eligible for at least three doses of vaccine. The Advisory Committee on Immunization Practices and the American Academy of Pediatrics recommend three doses of DTP to be administered at ages 2, 4, and 6 months. An additional two doses are recommended, one each at ages 12–18 months and at 4–6 years (*6*). Either DTP or diphtheria

Petussis — Continued

and tetanus toxoids and acellular pertussis vaccine (DTaP) can be administered for the fourth and fifth doses to children aged 15 months–6 years.

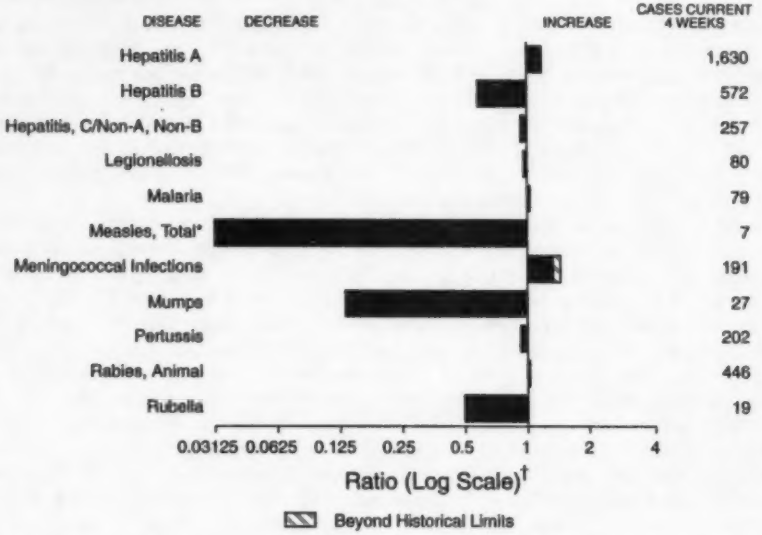
Since 1992, coverage with three doses of DTP or DT has increased, indicating progress toward the Childhood Immunization Initiative goal of 90% coverage by 1996. As a consequence, the proportion of persons with pertussis who have been vaccinated most likely will increase. Based on the screening method (which accounts for changes in vaccination coverage but may not provide an accurate estimate of vaccine efficacy when vaccination coverage is high) (*5*), estimated VE during 1992–1994 was consistent with previous reports about the efficacy of whole-cell pertussis vaccine in the United States during the mid-1980s, which documented 64% protection against mild disease and 95% protection against severe disease (*7*).

In the United States, widespread use of whole-cell pertussis vaccines among infants since 1949 has resulted in the successful control of pertussis. National pertussis surveillance data during January 1992–June 1995 indicate the continued effectiveness of the current pertussis vaccination program. However, despite increasing vaccination coverage in recent years, pertussis outbreaks (e.g., in Cincinnati and Chicago in 1993 [*3*]) continue to occur. Preliminary results of the protective efficacy of new acellular pertussis vaccines (when used for the first three doses among infants) suggest that these vaccines are either equally or more efficacious than whole-cell vaccines. Further scientific review of these results is in progress, but until such vaccines are licensed and available for use among infants, timely age-appropriate vaccination of infants with whole-cell pertussis vaccines should continue. Previous delays in administering pertussis vaccine to infants have resulted in widespread outbreaks (e.g., in the United Kingdom and Japan during the 1970s and Sweden during the 1980s) (*8*).

References

1. Farizo KM, Cochi SL, Zell ER, Patriarca PA, Wassilak SGF, Brink E. Epidemiologic features of pertussis in the United States, 1980–1989. Clin Infect Dis 1992;14:708–19.
2. Davis SF, Strebel PM, Cochi SL, Zell ER, Hadler SC. Pertussis surveillance—United States, 1989–1991. In: CDC surveillance summaries (December). MMWR 1992;41(no. SS-8):11–9.
3. CDC. Resurgence of pertussis—United States, 1993. MMWR 1993;42:952–3,959–60.
4. Massey JT, Moore TF, Parsons VL, Tadros W. Design and estimation for the National Health Interview Survey, 1985–1994. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1989. (Vital and health statistics; series 2, no. 110).
5. Farrington CP. Estimation of vaccine effectiveness using the screening method. Int J Epidemiol 1993;22:742–6.
6. CDC. Recommended childhood immunization schedule—United States, 1995. MMWR 1995; 44(no. RR-5).
7. Onorato IM, Wassilak SG, Mead B. Efficacy of whole-cell pertussis vaccine in preschool children in the United States. JAMA 1992;267:2745–9.
8. Mortimer EA. Pertussis vaccine. In: Plotkin SA, Mortimer EA, eds. Vaccines. 2nd ed. Philadelphia, Pennsylvania: W.B. Saunders Co, 1994:91–135.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending July 15, 1995, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline.

†Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending July 15, 1995 (28th Week)

	Cum. 1995		Cum. 1995
Anthrax	-	Psittacosis	36
Brucellosis	48	Rabies, human	1
Cholera	9	Rocky Mountain Spotted Fever	177
Congenital rubella syndrome	4	Syphilis, congenital, age < 1 year§	132
Diphtheria*	-	Tetanus	13
Haemophilus influenzae†	675	Toxic shock syndrome	106
Hansen Disease	72	Trichinosis	23
Plague	5	Typhoid fever	159
Poliomyelitis, Paralytic	-		

*The case previously reported in 1995 had onset of illness in October 1994. It will now be included in 1994 data.
†Of 658 cases of known age, 162 (25%) were reported among children less than 5 years of age.
§Updated quarterly from reports to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services. This total through first quarter 1995.
-: no reported cases

TABLE II. Cases of selected notifiable diseases, United States, weeks ending July 15, 1995, and July 16, 1994 (28th Week)

Reporting Area	AIDS*	Gonorrhea		Hepatitis (Viral), by type						Legionellosis	
				A		B		C/NA,NB			
	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	35,614	187,882	208,640	13,862	12,122	5,198	8,139	2,290	2,210	864	768
NEW ENGLAND	1,797	2,460	4,210	131	170	93	214	59	84	13	15
Maine	71	42	49	17	16	6	9	-	-	4	-
N.H.	56	71	45	6	9	13	16	9	7	1	-
Vt.	15	26	14	4	3	1	6	1	6	-	-
Mass.	812	1,455	1,564	51	70	39	130	48	59	7	8
R.I.	137	266	248	17	14	8	5	1	12	1	7
Conn.	706	600	2,290	36	58	26	48	-	-	N	N
MID. ATLANTIC	9,135	18,699	23,055	812	867	627	803	220	289	86	116
Upstate N.Y.	1,133	3,304	5,147	213	325	208	219	115	120	29	23
N.Y. City	4,481	6,128	8,503	373	289	173	189	1	1	1	-
N.J.	2,225	2,244	2,810	105	171	142	213	84	122	15	18
Pa.	1,296	7,023	6,595	121	82	104	202	20	26	41	75
E.N. CENTRAL	2,897	39,460	42,425	1,655	1,165	530	648	152	195	184	214
Ohio	607	12,247	12,752	1,050	381	69	98	5	13	88	98
Ind.	261	4,148	4,450	85	204	131	117	1	5	44	24
Ill.	1,284	10,770	12,365	217	311	94	177	33	53	13	21
Mich.	572	9,298	9,032	203	141	206	214	113	124	21	40
Wis.	173	2,997	3,826	100	128	30	42	-	-	18	31
W.N. CENTRAL	867	9,807	11,408	904	582	321	348	55	48	70	54
Minn.	204	1,504	1,679	96	114	28	39	2	10	-	2
Iowa	44	798	719	41	28	23	16	5	7	14	22
Mo.	348	5,902	6,260	636	257	230	254	35	8	41	17
N. Dak.	5	16	21	16	2	3	-	4	1	3	4
S. Dak.	9	92	107	21	17	2	-	1	-	-	-
Nebr.	71	-	749	25	87	17	19	5	9	8	7
Kans.	186	1,495	1,873	69	77	18	20	3	13	4	2
S. ATLANTIC	9,055	55,296	54,843	849	820	781	1,224	169	274	123	186
Del.	165	1,092	996	7	14	2	8	1	1	1	-
Md.	1,313	6,832	10,285	109	97	146	188	5	18	20	49
D.C.	579	2,454	3,909	15	14	13	29	-	-	4	5
Va.	645	5,645	6,590	99	78	49	63	5	18	8	5
W. Va.	44	430	387	11	7	29	20	26	20	3	1
N.C.	490	12,667	13,428	65	67	173	157	28	36	21	12
S.C.	449	6,643	6,704	22	25	32	22	12	3	21	9
Ga.	1,090	8,539	U	54	23	63	493	15	151	23	79
Fla.	4,280	10,994	12,544	267	295	274	244	77	29	22	26
E.S. CENTRAL	1,109	23,579	24,032	826	272	488	599	621	458	21	62
Ky.	155	2,532	2,479	26	98	39	56	12	17	3	7
Tenn.	437	7,158	7,662	712	103	382	503	607	433	12	31
Ala.	298	10,024	8,362	51	44	67	40	2	8	5	9
Miss.	219	3,865	5,529	37	27	-	-	-	-	1	15
W.S. CENTRAL	3,137	19,826	25,268	1,658	1,511	752	582	331	150	8	23
Ark.	137	1,968	3,785	183	37	27	14	3	4	1	4
La.	502	6,425	6,674	49	79	105	102	94	77	2	6
Okla.	154	1,382	2,401	370	137	249	68	213	35	3	9
Tex.	2,344	10,051	12,408	1,056	1,258	371	398	21	34	2	4
MOUNTAIN	1,119	4,366	5,291	2,154	2,370	447	342	249	243	73	58
Mont.	9	39	44	56	15	15	14	9	5	4	14
Idaho	26	68	46	212	186	51	53	33	54	2	1
Wyo.	6	26	38	75	13	14	14	111	74	5	3
Colo.	372	1,592	1,752	284	284	68	56	35	41	31	12
N. Mex.	107	443	523	384	599	159	110	30	35	3	2
Ariz.	299	1,437	1,816	630	890	75	28	17	12	6	4
Utah	69	83	166	457	242	50	36	6	11	9	6
Nev.	231	678	906	56	141	15	31	8	11	13	16
PACIFIC	6,498	14,389	18,108	4,873	4,565	1,159	1,379	434	489	86	40
Wash.	495	1,360	1,582	389	625	94	130	116	141	11	8
Oreg.	223	212	488	969	497	49	80	27	23	-	-
Calif.	5,594	12,077	15,158	3,394	3,285	1,000	1,139	281	321	70	30
Alaska	46	388	480	24	127	5	7	1	-	-	-
Hawaii	140	352	402	97	31	11	23	9	4	5	2
Guam	-	42	72	2	13	-	4	-	-	-	1
P.R.	1,514	291	283	60	36	401	192	211	96	-	-
V.I.	21	6	11	-	2	2	6	-	1	-	-
Amer. Samoa	-	13	18	5	5	-	-	-	-	-	-
C.N.M.I.	-	20	31	15	4	7	1	-	-	-	-

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for Prevention Services, last update June 29, 1995.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 15, 1995, and July 16, 1994 (28th Week)

Reporting Area	Lyme Disease		Malaria		Measles (Rubeola)						Meningococcal Infections		Mumps	
					Indigenous		Imported*		Total					
	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	1995	Cum. 1995	1995	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	2,774	4,151	527	508	3	202	-	8	211	772	1,852	1,700	492	793
NEW ENGLAND	656	868	23	31	-	4	-	-	4	23	91	71	8	14
Maine	3	2	2	2	-	-	-	-	-	4	6	13	4	3
N.H.	14	13	1	3	-	-	-	-	-	1	17	7	1	4
Vt.	5	5	-	1	-	-	-	-	-	2	8	2	-	-
Mass.	56	58	8	13	-	2	-	-	2	7	32	30	1	-
R.I.	135	107	2	5	-	2	-	-	2	6	-	-	-	1
Conn.	443	683	10	7	-	-	-	-	-	3	30	19	2	6
MID. ATLANTIC	1,647	2,470	124	85	-	4	-	2	6	208	224	175	66	74
Upstate N.Y.	895	1,755	28	26	-	-	-	-	-	15	72	60	18	20
N.Y. City	55	6	53	26	-	2	-	2	4	13	23	23	5	2
N.J.	260	453	31	17	-	2	-	-	2	172	53	37	6	13
Pa.	437	256	12	16	-	-	-	-	-	8	66	55	39	39
E.N. CENTRAL	34	296	66	56	-	7	-	2	9	101	251	248	82	143
Ohio	25	19	5	7	-	1	-	-	1	16	81	71	26	41
Ind.	5	8	11	9	-	-	-	-	-	1	39	36	1	6
Ill.	3	14	32	25	-	-	-	1	1	58	71	85	27	60
Mich.	1	5	12	13	-	4	-	1	5	25	50	31	26	31
Wis.	-	250	6	2	-	2	-	-	2	3	10	25	-	5
W.N. CENTRAL	38	65	11	24	1	2	-	-	2	169	115	112	31	42
Minn.	-	2	3	7	-	-	-	-	-	-	17	10	2	3
Iowa	6	2	1	4	-	-	-	-	-	7	23	13	8	10
Mo.	15	56	4	9	-	1	-	-	1	159	44	54	17	26
N. Dak.	-	-	-	1	-	-	-	-	-	-	1	1	-	2
S. Dak.	-	-	1	-	-	-	-	-	-	-	5	7	-	-
Nebr.	1	2	2	2	-	-	-	-	-	2	9	9	4	1
Kans.	16	3	-	1	1	1	-	-	1	1	16	18	-	-
S. ATLANTIC	278	334	110	100	2	7	-	-	7	13	320	249	74	121
Del.	7	44	1	3	-	-	-	-	-	-	3	4	-	-
Md.	196	104	29	43	-	-	-	-	-	3	26	19	20	36
D.C.	-	2	9	8	-	-	-	-	-	-	1	2	-	-
Va.	21	41	22	11	-	-	-	-	-	2	36	46	14	27
W. Va.	13	9	1	-	-	-	-	-	-	1	5	10	-	3
N.C.	22	43	8	2	-	-	-	-	-	-	50	40	16	24
S.C.	8	5	-	2	-	-	-	-	-	-	42	11	7	6
Ga.	8	80	12	17	-	2	-	-	2	2	70	57	6	8
Fla.	3	6	28	14	2	5	-	-	5	5	87	60	11	17
E.S. CENTRAL	17	24	10	14	-	-	-	-	-	28	115	132	13	15
Ky.	3	15	1	4	-	-	-	-	-	-	38	29	-	-
Tenn.	11	6	3	6	-	-	-	-	-	28	35	24	-	5
Ala.	1	3	5	3	-	-	-	-	-	-	27	51	4	3
Miss.	2	-	1	1	-	-	-	-	-	-	17	28	9	7
W.S. CENTRAL	57	52	15	24	-	19	-	-	19	16	233	200	33	168
Ark.	4	3	3	2	-	2	-	-	2	1	19	33	2	5
La.	1	-	1	4	-	17	-	-	17	1	32	25	8	19
Okla.	22	26	-	2	-	-	-	-	-	-	23	19	-	23
Tex.	30	23	11	16	-	-	-	-	-	14	159	123	23	121
MOUNTAIN	5	2	34	21	-	48	-	-	49	156	135	120	24	31
Mont.	-	-	3	-	-	-	-	-	-	-	2	3	1	-
Idaho	-	1	1	2	-	-	-	-	1	-	5	15	3	7
Wyo.	3	1	-	1	U	-	U	-	-	-	5	5	-	1
Colo.	1	-	16	9	-	8	-	-	8	19	36	23	1	2
N. Mex.	-	-	3	3	-	29	-	-	29	-	27	11	N	N
Ariz.	-	-	6	1	-	10	-	-	10	-	43	41	2	3
Utah	-	-	4	4	-	-	-	-	-	128	10	15	10	11
Nev.	1	-	1	1	U	1	U	-	1	9	7	7	6	7
PACIFIC	42	40	134	153	-	111	-	4	115	88	368	393	159	185
Wash.	4	-	12	14	-	13	-	2	15	3	63	63	10	14
Oreg.	3	5	4	11	-	1	-	-	1	-	60	80	N	N
Calif.	35	35	109	118	-	97	-	1	98	48	237	238	136	159
Alaska	-	-	1	-	-	-	-	-	-	5	6	2	9	2
Hawaii	-	-	8	10	-	-	-	1	1	2	2	4	4	10
Guam	-	-	-	-	U	-	U	-	-	228	3	-	3	4
P.R.	-	-	1	3	-	10	-	-	10	11	13	5	-	2
V.I.	-	-	-	-	U	-	U	-	-	-	-	-	2	3
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	2
C.N.M.I.	-	-	1	1	-	-	-	-	-	29	-	-	-	2

*For imported measles, cases include only those resulting from importation from other countries.
N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 15, 1995, and July 16, 1994 (28th Week)

Reporting Area	Pertussis			Rubella			Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	1995	Cum. 1995	Cum. 1994	1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	50	1,374	1,873	9	83	193	8,165	11,523	9,805	11,417	3,492	3,954
NEW ENGLAND	4	202	193	4	19	125	97	122	231	221	882	1,003
Maine	-	20	2	-	1	-	2	4	12	-	-	-
N.H.	-	21	39	-	1	-	1	1	8	10	99	103
Vt.	2	11	28	-	-	-	-	-	3	3	117	87
Mass.	2	140	102	-	3	122	34	48	116	113	300	382
R.I.	-	-	4	-	-	2	1	11	23	18	161	5
Conn.	-	10	18	4	14	1	59	58	69	77	185	426
MID. ATLANTIC	6	135	318	-	6	8	468	750	1,974	2,220	773	975
Upstate N.Y.	5	70	122	-	3	5	32	95	224	298	298	712
N.Y. City	-	23	67	-	3	-	217	332	1,057	1,346	-	-
N.J.	-	5	9	-	-	1	106	115	377	402	213	160
Pa.	1	37	120	-	-	-	113	208	316	174	264	103
E.N. CENTRAL	2	155	299	-	2	9	1,373	1,670	988	1,097	26	23
Ohio	-	52	78	-	-	-	461	631	160	173	3	-
Ind.	-	13	39	-	-	-	139	125	38	92	3	6
Ill.	2	37	62	-	-	1	524	571	551	553	3	4
Mich.	-	41	23	-	2	8	158	163	206	243	16	7
Wis.	-	12	97	-	-	-	91	180	31	36	1	6
W.N. CENTRAL	1	78	80	-	-	2	430	681	309	278	169	121
Minn.	-	28	39	-	-	-	28	25	64	60	6	14
Iowa	-	3	6	-	-	-	28	33	40	20	64	48
Mo.	-	18	19	-	-	2	365	581	127	129	19	10
N. Dak.	-	6	4	-	-	-	-	1	1	5	19	6
S. Dak.	-	7	-	-	-	-	-	1	13	16	35	19
Nebr.	-	4	5	-	-	-	-	10	10	8	-	-
Kans.	1	12	7	-	-	-	9	30	54	40	26	24
S. ATLANTIC	22	158	184	2	23	12	1,995	2,958	1,885	2,136	1,176	1,081
Del.	-	6	-	-	-	-	8	16	12	26	33	21
Md.	1	16	56	-	-	-	126	127	222	168	236	320
D.C.	-	3	4	-	-	-	65	137	57	61	10	2
Va.	-	8	17	-	-	-	326	398	136	198	229	209
W. Va.	-	-	2	-	-	-	8	8	49	47	57	43
N.C.	13	68	44	-	-	-	626	946	214	248	263	93
S.C.	1	14	10	-	-	-	340	402	181	209	75	99
Ga.	-	6	15	-	-	-	287	470	284	406	158	208
Fla.	7	37	36	2	23	12	209	452	710	773	115	86
E.S. CENTRAL	1	35	96	-	-	-	2,093	2,006	543	801	137	110
Ky.	-	-	53	-	-	-	106	112	53	173	12	10
Tenn.	-	7	17	-	-	-	440	528	162	265	49	34
Ala.	1	28	15	-	-	-	333	372	202	229	73	64
Miss.	-	-	11	-	-	-	1,212	994	126	134	3	2
W.S. CENTRAL	6	88	55	3	6	12	1,268	2,821	1,294	1,409	128	413
Ark.	-	-	12	-	-	-	160	277	93	124	18	15
La.	-	7	6	-	-	-	584	968	6	7	23	43
Okla.	-	20	21	-	-	4	47	89	117	139	22	21
Tex.	6	61	16	3	6	8	477	1,287	1,078	1,139	65	334
MOUNTAIN	2	267	232	-	5	4	130	162	352	283	72	76
Mont.	-	3	3	-	-	-	3	2	10	9	26	10
Idaho	-	74	23	-	1	-	-	1	8	9	-	2
Wyo.	U	1	-	U	-	-	2	-	1	2	18	12
Colo.	-	21	127	-	-	-	74	80	22	29	-	6
N. Mex.	-	38	10	-	-	-	8	9	86	37	3	2
Ariz.	-	110	54	-	3	-	19	36	148	114	19	36
Utah	2	15	13	-	1	3	3	8	19	23	5	6
Nev.	U	5	2	U	-	1	21	26	58	60	1	2
PACIFIC	6	258	416	-	22	23	311	555	2,251	2,972	149	152
Wash.	1	45	55	-	1	-	9	24	141	146	2	6
Oreg.	1	10	55	-	1	3	6	20	25	86	-	-
Calif.	4	176	298	-	18	18	295	508	1,953	2,562	143	115
Alaska	-	-	-	-	-	-	1	2	47	35	4	31
Hawaii	-	25	8	-	2	2	-	1	85	143	-	-
Guam	U	-	2	U	-	1	1	3	5	45	-	-
P.R.	-	6	2	-	-	-	150	181	89	102	24	51
V.I.	U	-	-	U	-	-	2	22	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	1	3	3	-	-
C.N.M.I.	-	-	-	-	-	-	3	1	13	16	-	-

U: Unavailable -: no reported cases

TABLE III. Deaths in 121 U.S. cities,* week ending July 15, 1995 (28th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	536	371	83	55	8	16	42
Boston, Mass.	154	97	26	21	2	8	10
Bridgeport, Conn.	26	21	3	2	-	-	1
Cambridge, Mass.	28	20	4	4	-	-	2
Fall River, Mass.	21	17	1	3	-	-	2
Hartford, Conn.	53	38	9	3	1	2	2
Lowell, Mass.	13	9	2	2	-	-	1
Lynn, Mass.	13	7	1	-	-	-	1
New Bedford, Mass.	23	18	3	2	-	-	3
New Haven, Conn.	37	17	8	7	1	4	3
Providence, R.I.	55	38	12	3	-	2	5
Somerville, Mass.	2	2	-	-	-	-	-
Springfield, Mass.	33	23	5	4	1	-	1
Waterbury, Conn.	25	21	1	2	1	-	3
Worcester, Mass.	53	43	8	2	-	-	8
MID. ATLANTIC	2,408	1,530	500	288	48	38	84
Albany, N.Y.	49	32	13	2	1	1	3
Allentown, Pa.	27	22	5	-	-	-	-
Buffalo, N.Y.	107	83	17	5	1	1	4
Camden, N.J.	29	18	5	4	2	-	-
Elizabeth, N.J.	22	14	6	1	1	-	-
Erie, Pa.§	40	31	8	1	-	-	1
Jersey City, N.J.	38	23	6	8	1	-	-
New York City, N.Y.	1,373	848	295	189	30	21	38
Newark, N.J.	73	22	16	25	5	5	3
Paterson, N.J.	34	9	11	5	2	1	-
Philadelphia, Pa.	190	121	43	24	2	-	12
Pittsburgh, Pa.§	55	39	11	5	-	-	2
Reading, Pa.	12	9	2	1	-	-	1
Rochester, N.Y.	137	102	27	5	2	1	12
Schenectady, N.Y.	27	21	5	1	-	-	-
Scranton, Pa.§	29	25	4	-	-	-	1
Syracuse, N.Y.	108	75	23	5	-	5	3
Trenton, N.J.	18	10	6	1	-	1	-
Utica, N.Y.	13	8	3	2	-	-	1
Yonkers, N.Y.	27	18	4	4	1	-	3
E.N. CENTRAL	2,238	1,455	422	213	75	45	106
Akron, Ohio	89	53	20	6	8	2	-
Canton, Ohio	29	21	7	-	1	-	1
Chicago, Ill.	409	239	70	67	17	15	25
Cincinnati, Ohio	119	56	25	9	1	2	7
Cleveland, Ohio	169	113	29	20	3	4	5
Columbus, Ohio	205	131	47	15	9	3	10
Dayton, Ohio	131	91	26	8	5	1	6
Detroit, Mich.	234	144	53	29	5	3	4
Evansville, Ind.	48	34	7	6	-	1	1
Fort Wayne, Ind.	67	51	9	6	1	-	4
Gary, Ind.	15	9	1	3	-	1	-
Grand Rapids, Mich.	39	26	6	3	1	3	1
Indianapolis, Ind.	170	110	32	14	11	3	10
Madison, Wis.	58	35	15	7	1	-	3
Milwaukee, Wis.	153	118	24	8	3	-	11
Peoria, Ill.	32	24	3	1	2	2	6
Rockford, Ill.	50	40	7	3	-	-	5
South Bend, Ind.	53	41	11	-	1	-	3
Toledo, Ohio	93	68	15	4	3	3	3
Youngstown, Ohio	75	51	15	4	3	2	1
W.N. CENTRAL	685	484	113	34	19	6	44
Des Moines, Iowa	88	63	23	-	2	-	11
Duluth, Minn.	21	15	2	3	1	-	1
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	90	59	14	5	3	-	5
Lincoln, Nebr.	31	26	3	1	-	1	3
Minneapolis, Minn.	175	130	26	14	5	-	12
Omaha, Nebr.	92	66	19	2	3	2	6
St. Louis, Mo.	107	77	17	6	5	2	2
St. Paul, Minn.	61	48	9	3	-	1	4
Wichita, Kans.	U	U	U	U	U	U	U
S. ATLANTIC	1,521	980	294	185	54	25	96
Atlanta, Ga.	156	99	33	16	7	1	8
Baltimore, Md.	296	162	65	56	4	9	29
Charlotte, N.C.	93	65	16	5	7	-	3
Jacksonville, Fla.	147	103	24	13	2	5	11
Miami, Fla.	138	79	27	22	8	-	1
Norfolk, Va.	63	40	16	5	1	1	9
Richmond, Va.	98	62	17	12	6	1	4
Savannah, Ga.	51	37	7	5	1	1	5
St. Petersburg, Fla.	22	18	4	-	-	-	2
Tampa, Fla.	222	160	37	14	8	1	21
Washington, D.C.	217	121	46	34	10	6	2
Wilmington, Del.	20	14	2	3	-	-	1
E.S. CENTRAL	681	447	135	59	17	21	38
Birmingham, Ala.	159	93	35	13	9	7	2
Chattanooga, Tenn.	67	49	13	4	-	1	8
Knoxville, Tenn.	58	43	8	3	1	1	4
Lexington, Ky.	19	16	2	1	-	-	1
Memphis, Tenn.	138	87	23	14	3	11	15
Mobile, Ala.	63	37	16	8	-	-	1
Montgomery, Ala.	63	49	12	2	-	-	3
Nashville, Tenn.	116	73	24	14	4	1	4
W.S. CENTRAL	1,516	926	303	174	66	47	78
Austin, Tex.	75	41	21	9	2	2	1
Baton Rouge, La.	56	39	4	4	5	4	2
Corpus Christi, Tex.	68	41	17	6	3	1	3
Dallas, Tex.	207	110	43	37	8	9	5
El Paso, Tex.	95	59	16	11	7	2	4
Ft. Worth, Tex.	95	59	20	7	5	4	5
Houston, Tex.	375	203	97	47	16	12	25
Little Rock, Ark.	68	41	13	7	5	2	6
New Orleans, La.	84	47	13	9	7	8	-
San Antonio, Tex.	217	160	27	22	5	3	16
Shreveport, La.	45	37	6	2	-	-	2
Tulsa, Okla.	131	89	28	13	3	-	9
MOUNTAIN	881	568	166	88	38	21	59
Albuquerque, N.M.	81	47	15	11	5	3	3
Colo. Springs, Colo.	110	74	18	12	4	2	9
Denver, Colo.	79	55	11	7	4	2	2
Las Vegas, Nev.	159	100	36	17	3	3	9
Ogden, Utah	29	23	3	-	2	1	3
Phoenix, Ariz.	166	97	37	24	7	1	12
Pueblo, Colo.	28	19	5	4	-	-	2
Salt Lake City, Utah	94	62	10	8	8	6	7
Tucson, Ariz.	135	91	31	5	5	3	12
PACIFIC	2,003	1,368	340	204	51	35	151
Berkeley, Calif.	13	10	3	-	-	-	1
Fresno, Calif.	74	38	18	10	2	6	7
Glendale, Calif.	28	24	3	-	1	-	1
Honolulu, Hawaii	81	58	12	5	5	1	5
Long Beach, Calif.	67	40	13	7	3	4	6
Los Angeles, Calif.	537	360	91	64	15	3	27
Pasadena, Calif.	20	17	3	-	-	-	5
Portland, Oreg.	169	115	30	16	4	4	9
Sacramento, Calif.	194	133	37	17	4	3	20
San Diego, Calif.	155	102	27	23	1	1	14
San Francisco, Calif.	157	98	20	32	5	2	17
San Jose, Calif.	180	128	30	11	4	7	21
Santa Cruz, Calif.	31	25	5	1	-	-	1
Seattle, Wash.	152	107	27	11	3	4	6
Spokane, Wash.	51	42	5	2	2	-	5
Tacoma, Wash.	94	71	16	5	2	-	6
TOTAL	12,449¶	8,109	2,356	1,300	374	252	698

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.
†Pneumonia and influenza.
§Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
¶Total includes unknown ages.
U: Unavailable -: no reported cases

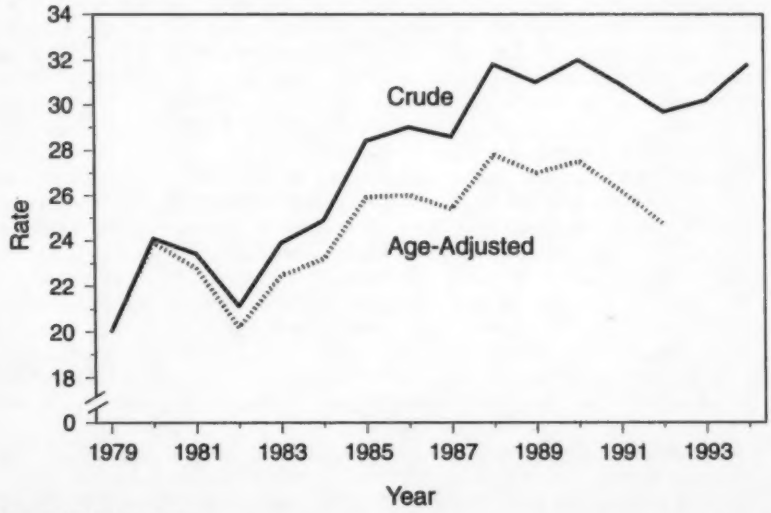
Pneumonia and Influenza Death Rates — United States, 1979–1994

The combined cause-of-death category pneumonia and influenza (P&I) (*International Classification of Diseases, Ninth Revision*, codes 480–487) ranks as the sixth leading cause of death in the United States following heart disease, cancer, stroke, unintentional injuries, and chronic obstructive pulmonary disease (*1*). Changes in the epidemiology of *Streptococcus pneumoniae* and other recognized respiratory pathogens, the increasing occurrence of drug-resistant microorganisms, and the detection of new respiratory pathogens have heightened awareness of the public health importance of severe respiratory infections (*2–5*). To characterize the epidemiology of P&I deaths in the United States, CDC further analyzed underlying and multiple cause-of-death mortality files for 1979–1994. This report summarizes the results of this analysis.

From 1979 to 1994, the overall crude death rates for P&I (based on underlying cause of death) increased 59%, from 20.0 to 31.8 deaths per 100,000 population (Figure 1). From 1979 to 1992 (the most recent year for which age-adjusted data are available), the P&I death rate, age-adjusted to a 1980 standard population, increased 22%, from 20.4 to 24.8.

In 1992, persons aged ≥65 years accounted for 89% of all P&I deaths. From 1979 to 1992, P&I death rates for persons aged ≥65 years increased 44%, from 145.6 deaths per 100,000 population to 209.1. During this period, rates also increased for persons aged 20–44 years; however, the small number of deaths among persons in this age group (2148 in 1992) limited the contribution to the overall trend.

FIGURE 1. Crude and age-adjusted rates* of pneumonia and influenza deaths by underlying cause of death, by year — United States, 1979–1994†



*Per 100,000 population.
†Data for 1993 and 1994 are provisional and are for a 12-month period ending with November.

Pneumonia and Influenza — Continued

To control for the highly variable seasonal contribution of influenza-associated deaths, the trend for mean weekly number of P&I deaths for noninfluenza months (May–October) was analyzed. From 1979 through 1992, age-adjusted P&I death rates during these months increased steadily from 3.1 to 5.0 per 1 million population. Analysis of P&I deaths listed in any position on the death certificate (multiple cause-of-death data) indicated a similar increase.

During 1979–1992, the diagnostic code for pneumonia of unspecified etiology (ICD-9 code 486) accounted for most of the overall increase: age-adjusted death rates in this diagnostic category increased 74%. In addition, in 1992, 84% of all P&I deaths were assigned this code, compared with 59% in 1979.

Reported by: Childhood and Respiratory Diseases Br, Div of Bacterial and Mycotic Diseases, and Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Mortality Statistics Br, Div of Vital Statistics, National Center for Health Statistics, CDC.

Editorial Note: The findings in this report document the recent increase in mortality attributed to P&I in the United States. This increase reflects both growth in the proportion of persons in older age groups (from 1970 to 1990, the proportion of persons in the United States population aged ≥65 years increased from 9.8% to 12.5%) and higher P&I death rates in these age groups. A high proportion of these deaths was attributed to pneumonia of unspecified etiology, which probably includes both pneumonias caused by known pathogens not specified on the death certificate and pneumonias caused by new or unrecognized agents.

Changes in the epidemiology of recognized respiratory pathogens (e.g., *S. pneumoniae*), for which precise diagnoses are difficult to make in clinical settings, may have contributed to the increasing death rate in older persons. Although the proportion of the increase in P&I death rates accounted for by all vaccine-preventable respiratory diseases is unknown, the increased rates also underscore the need for more complete use of pneumococcal and influenza vaccines as recommended by the Immunization Practices Advisory Committee (ACIP) (*6,7*). One of the national health objectives for the year 2000 is to vaccinate 60% of persons at risk for pneumococcal disease and influenza (objective 20.11) (*8*). Although coverage levels for influenza vaccinations among persons aged ≥65 years have increased (in 1993, 52% reported having received influenza vaccine in the previous year), only 28% reported ever having received the pneumococcal vaccine in 1993 (*9*).

In addition to known but undiagnosed causes of respiratory infection, new or previously uncharacterized agents probably account for some of the increase in age-adjusted death rates attributed to pneumonia of unspecified etiology. For example, since the 1970s, several bacterial and viral agents have been identified as causes of lower respiratory infections, including *Legionella pneumophila*, *Chlamydia pneumoniae*, and *Sin Nombre* virus (the etiologic agent of hantavirus pulmonary syndrome). Recent prospective studies of community-acquired pneumonia have suggested that an etiology cannot be identified in 40%–50% of cases (*10*), probably reflecting both the lack of sensitive diagnostic tests for some known respiratory pathogens and the occurrence of respiratory infections for which the etiologies have not yet been identified.

Based on shifts in the age distribution of the total U.S. population, respiratory infectious diseases among the elderly probably will increase the need for health-care services and require the development of more effective prevention strategies.

Pneumonia and Influenza — Continued

Improvements in understanding the epidemiology of morbidity and mortality associated with unspecified pneumonias will require further examination of diagnostic and reporting practices for certification of causes of death and analyses of additional data sources (e.g., hospital discharge records). In addition, improved characterization of bacterial and viral causes of pneumonia may result from prospective epidemiologic and laboratory studies, development of more sensitive diagnostic tests, and wider use of available tests.

References

1. NCHS. Advance report of final mortality statistics, 1992. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1994. (Monthly vital statistics report; vol 43, no. 6, suppl).
2. Duchin JS, Koster FT, Peters CJ, et al. Hantavirus pulmonary syndrome: a clinical description of 17 patients with a newly recognized disease. N Engl J Med 1994;330:949–55.
3. Breiman RF, Spika JS, Navarro VJ, Darden PM, Darby CP. Pneumococcal bacteremia in Charleston County, South Carolina—a decade later. Arch Intern Med 1990;150:1401–5.
4. Hoge CW, Reichler MR, Dominguez EA, et al. An epidemic of pneumococcal disease in an overcrowded, inadequately ventilated jail. N Engl J Med 1994;331:643–8.
5. Breiman RF, Butler JC, Tenover FC, Elliot JA, Facklam RR. Emergence of drug-resistant pneumococcal infections in the United States. JAMA 1994;271:1831–5.
6. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1995;44(no. RR-3):2.
7. CDC. Update on adult immunization: recommendations of the Immunization Practices Advisory Committee (ACIP). MMWR 1991:40(no. RR-12):33–6,42–4.
8. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50213.
9. CDC. Influenza and pneumococcal vaccination coverage levels among persons aged ≥65 years —United States, 1973–1993. MMWR 1995;44:506–15.
10. Marrie TJ. Community-acquired pneumonia. Clin Infect Dis 1994;18:501–15.

Notice to Readers

Final 1994 Reports of Notifiable Diseases

The notifiable diseases table on pages 538–543 summarizes final data for 1994. These data, final as of July 7, 1995, will be published in more detail in the *Summary of Notifiable Diseases, 1994* (*1*).

Population estimates for the states are from the July 1, 1994, estimates by the U.S. Bureau of the Census, Population Division, Population Estimates Branch, press release CB94-204. Population estimates for territories are from the 1990 census, U.S. Bureau of the Census, press releases CB91-142, 242, 243, 263, and 276.

Reference

1. CDC. Summary of notifiable diseases, United States, 1994. MMWR 1995;44(no. 53) (in press).

NOTIFIABLE DISEASES — Reported cases, by geographic division and area, United States, 1994

Area	Total resident population (in thousands)	AIDS	Amebiasis	Anthrax	Aseptic meningitis	Botulism		Brucellosis	Chancroid
						Foodborne	Infant		
United States	**260,341**	**78,279***	**2,983**	**-**	**8,932**	**50**	**85**	**119**	**773†**
New England	**13,230**	**2,836**	**80**	**-**	**340**	**-**	**1**	**-**	**1**
Maine	1,240	117	10	-	33	-	-	-	-
N.H.	1,137	92	2	-	47	-	-	-	-
Vt.	580	38	3	-	36	-	-	-	-
Mass.	6,041	1,401	61	-	103	-	-	-	1
R.I.	997	276	4	-	121	-	-	-	-
Conn.	3,275	912	NN	-	NN	-	1	-	-
Mid. Atlantic	**38,125**	**22,465**	**876**	**-**	**957**	**2**	**16**	**2**	**395**
N.Y. (excl. NYC)	10,905	2,220	120	-	466	1	-	-	6
N.Y.C.	7,264	12,724	701	-	150	-	1	-	357
N.J.	7,904	4,993	25	-	NN	-	2	-	-
Pa.	12,052	2,528	30	-	341	1	13	2	-
E.N. Central	**43,017**	**6,324**	**187**	**-**	**1,852**	**2**	**9**	**8**	**48**
Ohio	11,102	1,184	22	-	399	1	4	2	8
Ind.	5,752	622	21	-	222	-	2	-	-
Ill.	11,752	3,104	45	-	472	1	2	5	38
Mich.	9,498	1,035	42	-	538	-	1	1	-
Wis.	5,082	379	57	-	21	-	-	-	2
W.N. Central	**18,054**	**1,838**	**131**	**-**	**476**	**-**	**2**	**1**	**8**
Minn.	4,567	422	39	-	43	-	-	-	-
Iowa	2,829	130	21	-	121	-	-	1	1
Mo.	5,278	713	38	-	175	-	-	-	2
N. Dak.	638	20	8	-	14	-	-	-	-
S. Dak.	721	19	4	-	3	-	-	-	-
Nebr.	1,623	89	6	-	41	-	-	-	-
Kans.	2,554	245	15	-	79	-	2	-	5
S. Atlantic	**45,738**	**18,857**	**203**	**-**	**2,000**	**-**	**4**	**17**	**30**
Del.	706	271	3	-	41	-	1	-	-
Md.	5,006	2,722	14	-	248	-	1	1	-
D.C.	570	1,399	2	-	53	-	-	-	-
Va.	6,552	1,162	39	-	337	-	2	2	-
W. Va.	1,822	96	6	-	39	-	-	-	-
N.C.	7,070	1,187	19	-	240	-	-	3	10
S.C.	3,864	1,158	NN	-	31	-	-	-	-
Ga.	7,055	2,245	58	-	80	-	-	3	-
Fla.	13,953	8,617	62	-	933	-	-	8	20
E.S. Central	**15,717**	**2,099**	**10**	**-**	**582**	**3**	**3**	**2**	**27**
Ky.	3,827	320	6	-	181	-	1	-	-
Tenn.	5,175	764	NN	-	164	2	1	1	3
Ala.	4,219	582	3	-	174	-	-	-	24
Miss.	2,669	433	1	-	63	1	1	1	-
W.S. Central	**27,963**	**7,671**	**124**	**-**	**1,072**	**25**	**4**	**32**	**260**
Ark.	2,453	284	4	-	62	-	1	1	-
La.	4,315	1,239	2	-	40	-	-	2	209
Okla.	3,258	269	8	-	-	1	-	-	-
Tex.	18,378	5,879	110	-	970	24	3	29	51
Mountain	**14,778**	**2,287**	**150**	**-**	**363**	**-**	**8**	**20**	**3**
Mont.	856	30	-	-	8	-	1	-	-
Idaho	1,133	61	6	-	6	-	2	-	-
Wyo.	476	18	-	-	4	-	1	-	-
Colo.	3,656	818	39	-	135	-	1	1	-
N. Mex.	1,654	211	27	-	20	-	-	1	-
Ariz.	4,075	612	61	-	79	-	-	17	3
Utah	1,908	152	6	-	55	-	3	1	-
Nev.	1,457	387	11	-	48	-	-	-	-
Pacific	**41,269**	**13,949**	**1,222**	**-**	**1,580**	**19**	**38**	**37**	**31**
Wash.	5,343	932	78	-	NN	3	2	-	1
Oreg.	3,086	606	109	-	NN	-	3	1	5
Calif.	31,431	12,136	991	-	1,350	4	30	36	25
Alaska	606	59	5	-	19	11	-	-	-
Hawaii	1,179	216	39	-	131	-	3	-	-
Guam	133	1	1	-	13	-	-	-	-
P.R.	3,522	2,359	1	-	72	-	-	-	32
V.I.	102	52	-	-	-	-	-	-	1
C.N.M.I.	43	-	-	-	-	-	-	-	-
American Samoa	47	-	-	-	-	-	-	-	-

*Total reported to Division of HIV/AIDS Prevention, National Center for Prevention Services, through December 31, 1994. Total includes 153 cases with unknown state of residence.
†Cases updated through Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, as of February 28, 1995.

NN: Not notifiable

NOTIFIABLE DISEASES — Reported cases, by geographic division and area, United States, 1994 (continued)

Area	Cholera	Diphtheria	Encephalitis: Primary infections	Encephalitis: Post-infectious	*Escherichia coli* O157:H7	Gonorrhea	Granuloma inguinale	*Haemophilus influenzae*	Hansen disease (leprosy)
United States	**39**	**2**	**717**	**143**	**1,470**	**418,068***	**3***	**1,174**	**136**
New England	**2**	**1**	**18**	**6**	**223**	**8,640**	**-**	**45**	**4**
Maine	-	-	5	-	NN	93	-	5	-
N.H.	-	-	-	2	NN	103	-	4	-
Vt.	-	-	3	1	12	40	-	-	-
Mass.	1	1	8	1	134	3,159	-	21	4
R.I.	-	-	2	2	9	478	-	4	-
Conn.	1	-	-	-	68	4,767	-	11	-
Mid. Atlantic	**6**	**-**	**63**	**20**	**160**	**49,450**	**-**	**149**	**16**
N.Y. (excl. NYC)	3	-	38	3	149	11,506	-	70	2
N.Y.C.	1	-	6	5	11	19,491	-	34	13
N.J.	2	-	-	-	-	5,289	-	16	1
Pa.	-	-	19	12	NN	13,184	-	29	-
E.N. Central	**5**	**-**	**169**	**22**	**269**	**87,065**	**-**	**199**	**9**
Ohio	-	-	55	4	109	24,746	-	109	-
Ind.	-	-	11	1	57	9,757	-	26	-
Ill.	2	-	65	5	103	26,571	-	43	6
Mich.	3	-	38	12	-	18,215	-	19	-
Wis.	-	-	-	-	NN	7,776	-	2	3
W.N. Central	**1**	**-**	**52**	**12**	**366**	**22,834**	**-**	**103**	**-**
Minn.	-	-	22	-	147	3,346	-	34	-
Iowa	1	-	1	1	56	1,645	-	9	-
Mo.	-	-	8	6	40	12,557	-	51	-
N. Dak.	-	-	4	-	31	35	-	-	-
S. Dak.	-	-	4	-	18	243	-	2	-
Nebr.	-	-	6	5	74	1,335	-	4	-
Kans.	-	-	7	-	NN	3,673	-	3	-
S. Atlantic	**3**	**-**	**161**	**65**	**49**	**104,591**	**2**	**234**	**2**
Del.	-	-	1	-	NN	2,038	-	1	-
Md.	1	-	28	5	NN	15,137	-	87	-
D.C.	-	-	-	1	-	6,827	-	-	-
Va.	1	-	34	6	NN	13,414	-	22	1
W. Va.	-	-	51	-	NN	805	-	7	-
N.C.	-	-	44	1	6	28,936	2	32	-
S.C.	-	-	-	-	17	13,087	-	3	-
Ga.	-	-	2	-	26	NA	-	67	-
Fla.	1	-	1	52	-	24,367	-	15	1
E.S. Central	**-**	**-**	**41**	**4**	**6**	**48,208**	**-**	**34**	**1**
Ky.	-	-	18	2	6	5,127	-	4	1
Tenn.	-	-	12	-	NN	15,745	-	10	-
Ala.	-	-	9	1	-	15,881	-	15	-
Miss.	-	-	4	1	-	11,455	-	5	-
W.S. Central	**4**	**-**	**63**	**2**	**98**	**53,529**	**-**	**74**	**33**
Ark.	-	-	1	-	10	6,892	-	5	2
La.	-	-	10	-	-	11,992	-	4	-
Okla.	-	-	-	-	18	4,888	-	45	-
Tex.	4	-	52	2	72	29,757	-	20	31
Mountain	**-**	**-**	**14**	**3**	**100**	**10,869**	**-**	**128**	**-**
Mont.	-	-	-	-	-	85	-	1	-
Idaho	-	-	-	-	-	98	-	5	-
Wyo.	-	-	3	1	NN	82	-	5	-
Colo.	-	-	4	-	76	3,632	-	17	-
N. Mex.	-	-	-	-	-	1,130	-	12	-
Ariz.	-	-	-	1	NN	3,803	-	26	-
Utah	-	-	3	1	NN	303	-	10	-
Nev.	-	-	4	-	24	1,736	-	52	-
Pacific	**18**	**1**	**136**	**9**	**199**	**33,082**	**1**	**208**	**71**
Wash.	-	-	1	-	174	2,893	-	10	7
Oreg.	-	-	-	-	1	978	1	26	-
Calif.	17	1	131	8	NN	27,593	-	165	43
Alaska	-	-	4	-	-	918	-	3	-
Hawaii	1	-	-	1	24	700	-	4	21
Guam	1	-	-	1	NN	110	-	-	11
P.R.	-	-	1	3	NN	500	-	3	1
V.I.	-	-	-	-	-	60	-	-	-
C.N.M.I.	-	-	-	-	-	-	-	26	-
American Samoa	-	-	-	-	-	-	-	-	4

*Cases updated through Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, as of February 28, 1995.

NA: Not available
NN: Not notifiable

NOTIFIABLE DISEASES — Reported cases, by geographic division and area, United States, 1994 (continued)

Area	Hepatitis A	Hepatitis B	Hepatitis C/non-A, non-B	Hepatitis unsp.	Legionel-losis	Lepto-spirosis	Lyme disease	Lympho-granuloma venereum
United States	**26,796**	**12,517**	**4,470**	**444**	**1,615**	**38**	**13,043**	**235***
New England	**296**	**354**	**168**	**15**	**79**	**3**	**2,827**	**6**
Maine	25	11	-	-	5	2	33	-
N.H.	17	28	11	-	-	-	30	-
Vt.	14	12	16	-	1	-	16	-
Mass.	112	200	121	13	55	-	247	6
R.I.	30	8	20	2	18	-	471	-
Conn.	98	95	-	-	NN	1	2,030	-
Mid. Atlantic	**2,007**	**1,761**	**485**	**10**	**264**	**2**	**8,171**	**108**
N.Y. (excl. NYC)	543	402	230	6	62	1	5,105	2
N.Y.C.	941	543	4	-	11	-	95	106
N.J.	308	410	211	-	49	1	1,533	-
Pa.	217	406	44	4	142	-	1,438	-
E.N. Central	**2,777**	**1,221**	**320**	**16**	**433**	**1**	**530**	**9**
Ohio	1,203	164	24	-	194	-	45	9
Ind.	381	215	9	-	48	-	19	-
Ill.	615	315	81	9	44	1	24	-
Mich.	352	432	206	7	82	-	33	-
Wis.	246	95	-	-	65	-	409	-
W.N. Central	**1,222**	**714**	**100**	**12**	**106**	**2**	**347**	**2**
Minn.	261	82	20	-	4	-	208	-
Iowa	84	27	14	11	34	-	17	-
Mo.	819	538	32	1	41	1	102	2
N. Dak.	6	1	1	-	4	-	-	-
S. Dak.	39	4	-	-	2	-	-	-
Nebr.	122	31	15	-	15	1	3	-
Kans.	111	31	18	-	6	-	17	-
S. Atlantic	**1,486**	**2,240**	**485**	**32**	**413**	**3**	**855**	**65**
Del.	22	14	2	-	31	-	106	-
Md.	198	354	21	8	82	1	341	-
D.C.	27	53	2	-	9	-	9	15
Va.	193	142	26	10	17	-	131	-
W. Va.	23	48	47	-	4	-	29	-
N.C.	145	291	59	-	28	1	77	44
S.C.	40	33	10	-	29	-	7	-
Ga.	43	555	220	-	118	-	127	3
Fla.	775	750	98	14	95	1	28	3
E.S. Central	**784**	**1,211**	**945**	**2**	**83**	**3**	**43**	**2**
Ky.	221	78	32	-	9	1	24	-
Tenn.	347	1,042	893	1	45	2	13	1
Ala.	139	91	20	1	13	-	6	1
Miss.	77	-	-	-	16	-	-	-
W.S. Central	**3,719**	**1,830**	**599**	**94**	**83**	**1**	**174**	**12**
Ark.	253	80	8	3	16	1	15	-
La.	170	203	215	2	20	-	4	12
Okla.	419	141	62	3	12	-	99	-
Tex.	2,877	1,426	314	86	15	-	56	-
Mountain	**5,296**	**894**	**454**	**73**	**97**	-	**18**	**7**
Mont.	25	21	13	-	16	-	-	-
Idaho	380	77	71	1	2	-	3	-
Wyo.	41	24	177	-	5	-	5	-
Colo.	584	97	79	14	19	-	1	1
N. Mex.	1,100	218	45	11	4	-	5	-
Ariz.	2,159	102	31	27	17	-	-	5
Utah	754	96	18	6	8	-	3	-
Nev.	253	59	20	14	26	-	1	1
Pacific	**9,229**	**2,452**	**910**	**190**	**77**	**23**	**78**	**24**
Wash.	1,119	255	294	9	13	-	4	3
Oreg.	1,241	158	48	2	-	1	6	2
Calif.	6,602	2,038	565	176	59	-	68	19
Alaska	209	13	-	-	-	-	-	-
Hawaii	58	28	5	3	5	22	-	-
Guam	23	5	-	9	1	-	-	-
P.R.	86	415	215	3	-	2	-	-
V.I.	3	9	1	-	-	-	-	-
C.N.M.I.	12	1	-	-	-	-	-	-
American Samoa	11	-	-	-	-	-	-	-

*Cases updated through Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, as of February 28, 1995.

NN: Not notifiable

NOTIFIABLE DISEASES — Reported cases, by geographic division and area, United States, 1994 (continued)

Area	Malaria	Measles		Meningococcal infections	Mumps	Pertussis	Plague	Poliomyelitis, paralytic
		Indigenous	Imported					
United States	1,229	748	217*	2,886	1,537	4,617	17	-†
New England	78	15	12	141	26	760	-	-
Maine	6	2	3	23	3	21	-	-
N.H.	3	1	-	8	4	107	-	-
Vt.	3	2	1	5	-	46	-	-
Mass.	38	1	6	68	3	534	-	-
R.I.	10	5	2	-	4	8	-	-
Conn.	18	4	-	37	12	44	-	-
Mid. Atlantic	281	200	27	312	116	695	-	-
N.Y. (excl. NYC)	60	12	16	105	33	254	-	-
N.Y.C.	106	11	4	40	12	224	-	-
N.J.	57	172	3	65	13	15	-	-
Pa.	38	5	4	102	58	202	-	-
E.N. Central	117	60	46	397	267	615	-	-
Ohio	20	15	2	121	77	162	-	-
Ind.	15	-	1	55	7	97	-	-
Ill.	48	18	41	125	110	111	-	-
Mich.	31	24	2	59	59	96	-	-
Wis.	3	3	-	37	14	149	-	-
W.N. Central	48	127	44	174	71	273	-	-
Minn.	16	-	-	23	5	142	-	-
Iowa	5	6	1	21	16	23	-	-
Mo.	14	119	42	78	44	45	-	-
N. Dak.	1	-	-	1	4	5	-	-
S. Dak.	-	-	-	9	-	26	-	-
Nebr.	5	1	1	14	1	14	-	-
Kans.	7	1	-	28	1	18	-	-
S. Atlantic	247	65	9	455	257	431	-	-
Del.	3	-	-	5	-	3	-	-
Md.	83	2	2	35	65	74	-	-
D.C.	15	-	-	7	-	11	-	-
Va.	37	1	2	69	48	37	-	-
W. Va.	-	37	-	14	5	6	-	-
N.C.	12	2	1	57	73	140	-	-
S.C.	5	-	-	40	8	14	-	-
Ga.	43	5	-	82	18	37	-	-
Fla.	49	18	4	146	40	109	-	-
E.S. Central	32	28	-	195	32	129	-	-
Ky.	12	-	-	42	-	60	-	-
Tenn.	10	28	-	40	9	22	-	-
Ala.	9	-	-	77	12	35	-	-
Miss.	1	-	-	36	11	12	-	-
W.S. Central	119	16	7	392	302	246	-	-
Ark.	5	5	-	55	7	33	-	-
La.	12	-	1	47	38	15	-	-
Okla.	9	-	-	53	23	38	-	-
Tex.	93	11	6	237	234	160	-	-
Mountain	41	163	55	178	162	809	15	-
Mont.	-	-	-	6	-	12	-	-
Idaho	2	1	-	17	10	172	-	-
Wyo.	1	-	-	9	3	-	-	-
Colo.	19	24	37	41	4	228	2	-
N. Mex.	3	2	-	17	NN	35	7	-
Ariz.	10	5	4	58	99	122	5	-
Utah	4	131	5	19	28	37	1	-
Nev.	2	-	9	11	18	3	-	-
Pacific	286	72	17	642	304	859	2	-
Wash.	45	3	1	111	23	140	-	-
Oreg.	17	-	2	143	NN	106	-	-
Calif.	207	51	10	374	258	594	2	-
Alaska	2	10	-	5	4	-	-	-
Hawaii	15	8	4	9	19	19	-	-
Guam	-	226	-	2	7	2	-	-
P.R.	5	46	-	7	2	3	-	-
V.I.	1	-	-	-	4	-	-	-
C.N.M.I.	1	29	-	-	2	-	-	-
American Samoa	-	-	-	-	3	1	-	-

*For 1994, includes both 142 cases of out-of-state importations and 75 cases of international importations.
†Two suspected cases of paralytic poliomyelitis were reported in 1994. Confirmation of these cases is pending review by external panel.

NN: Not notifiable

NOTIFIABLE DISEASES — Reported cases, by geographic division and area, United States, 1994 (continued)

Area	Psitta-cosis	Rabies		Rheumatic fever, acute	RMSF*	Rubella		Salmonel-losis	Shigel-losis
		Animal	Human			Rubella	Cong. syndrome		
United States	**38**	**8,147**	**8**	**112**	**486**	**227**	**7**	**43,323**	**29,789**
New England	**2**	**2,009**	**-**	**2**	**12**	**132**	**2**	**3,439**	**508**
Maine	-	10	-	1	-	-	-	191	10
N.H.	1	221	-	NN	-	-	-	213	20
Vt.	1	143	-	-	-	-	-	119	4
Mass.	-	734	-	1	4	128	2	2,009	243
R.I.	-	153	-	-	-	3	-	248	55
Conn.	-	748	-	-	8	3	-	659	176
Mid. Atlantic	**6**	**2,249**	**-**	**5**	**24**	**8**	**-**	**7,096**	**3,183**
N.Y. (excl. NYC)	1	1,569	-	NN	8	6	-	1,977	1,120
N.Y.C.	-	16	-	NN	3	1	-	1,889	1,007
N.J.	1	278	-	5	5	1	-	1,160	522
Pa.	4	386	-	NN	8	-	-	2,040	514
E.N. Central	**7**	**69**	**-**	**38**	**40**	**10**	**-**	**8,678**	**3,648**
Ohio	-	4	-	8	19	-	-	1,337	740
Ind.	1	14	-	2	8	-	-	581	544
Ill.	-	21	-	8	11	1	-	1,821	1,494
Mich.	3	14	-	8	2	9	-	869	432
Wis.	3	16	-	4	-	-	-	1,070	438
W.N. Central	**4**	**232**	**-**	**12**	**42**	**2**	**-**	**2,624**	**2,361**
Minn.	-	22	-	3	1	-	-	759	554
Iowa	-	90	-	3	1	-	-	404	336
Mo.	4	27	-	3	22	2	-	842	854
N. Dak.	-	14	-	NN	-	-	-	68	59
S. Dak.	-	44	-	2	13	-	-	143	207
Nebr.	-	-	-	NN	1	-	-	209	426
Kans.	-	35	-	1	4	-	-	399	123
S. Atlantic	**4**	**2,083**	**2**	**-**	**224**	**22**	**-**	**9,185**	**8,352**
Del.	-	74	-	NN	1	-	-	168	38
Md.	2	520	-	NN	21	-	-	1,178	323
D.C.	-	4	-	NN	-	-	-	118	70
Va.	2	428	-	NN	22	-	-	1,135	856
W. Va.	-	84	1	-	2	-	-	152	15
N.C.	-	175	-	NN	88	-	-	1,137	1,970
S.C.	-	179	-	NN	20	-	-	599	505
Ga.	-	387	-	NN	62	7	-	1,583	1,886
Fla.	-	252	1	NN	8	15	-	3,095	2,889
E.S. Central	**1**	**242**	**2**	**-**	**47**	**-**	**-**	**1,777**	**1,706**
Ky.	-	28	-	NN	10	-	-	380	208
Tenn.	-	82	1	NN	29	-	-	441	418
Ala.	1	128	1	NN	2	-	-	507	617
Miss.	-	4	-	-	6	NN	-	449	463
W.S. Central	**-**	**741**	**1**	**1**	**63**	**13**	**1**	**3,578**	**3,259**
Ark.	-	38	-	1	18	-	-	534	193
La.	-	73	-	NN	1	-	-	591	416
Okla.	-	39	-	NN	37	4	-	470	240
Tex.	-	591	1	NN	7	9	1	1,983	2,410
Mountain	**3**	**154**	**-**	**39**	**13**	**5**	**2**	**2,226**	**1,953**
Mont.	-	22	-	NN	4	-	-	145	4
Idaho	-	4	-	1	-	-	-	130	59
Wyo.	-	24	-	1	2	-	-	60	8
Colo.	3	18	-	8	4	-	-	709	530
N. Mex.	-	8	-	1	1	-	1	353	347
Ariz.	-	56	-	NN	1	-	1	427	680
Utah	-	13	-	28	-	4	-	202	240
Nev.	-	9	-	NN	1	1	-	200	85
Pacific	**11**	**368**	**1**	**23**	**-**	**35**	**2**	**7,770**	**4,819**
Wash.	4	15	-	-	-	-	-	883	478
Oreg.	2	13	-	NN	-	4	-	313	165
Calif.	4	294	1	18	-	27	2	6,235	3,953
Alaska	1	46	-	5	-	-	-	55	21
Hawaii	-	-	-	NN	-	4	-	304	202
Guam	-	-	-	3	-	1	-	76	33
P.R.	-	77	-	-	-	-	-	737	48
V.I.	-	-	-	-	-	-	-	2	4
C.N.M.I.	-	-	-	4	-	-	-	78	60
American Samoa	-	-	-	-	-	-	-	14	9

*Rocky Mountain spotted fever. NN: Not notifiable

NOTIFIABLE DISEASES — Reported cases, by geographic division and area, United States, 1994 (continued)

Area	Syphilis: Primary & secondary	Syphilis: Cong. (<1 yr.)	Syphilis: All stages	Tetanus	Toxic-shock syndrome	Trich-inosis	Tuber-culosis	Tularemia	Typhoid fever	Varicella (chicken-pox)
United States	**29,827***	**2,204***	**81,896***	**51**	**192**	**32**	**24,361**	**96**	**441**	**151,219**
New England	**219**	**14**	**1,128**	**2**	**5**	**1**	**595**	**1**	**25**	**11,676**
Maine	4	-	9	-	1	1	35	-	-	711
N.H.	4	-	18	1	-	-	17	-	-	3,408
Vt.	-	-	1	-	2	-	10	-	-	NN
Mass.	90	6	622	-	2	-	329	1	20	5,903
R.I.	18	2	141	-	-	-	56	-	1	1,654
Conn.	105	6	337	1	-	-	148	-	4	NN
Mid. Atlantic	1,446	681	14,302	7	30	5	5,112	2	121	5,978
N.Y. (excl. NYC)	173	59	1,375	3	16	2	641	1	12	NA
N.Y.C.	629	329	8,001	-	-	-	2,995	1	78	5,978
N.J.	240	178	2,188	2	-	2	855	-	25	NN
Pa.	404	115	2,738	2	14	1	621	-	6	NN
E.N. Central	**3,162**	**386**	**9,452**	**8**	**43**	**3**	**2,236**	**6**	**68**	**77,332**
Ohio	1,187	71	2,740	1	10	-	337	1	7	5,495
Ind.	286	11	844	2	3	-	211	-	4	NN
Ill.	1,099	256	3,877	1	15	-	1,117	3	42	33,889
Mich.	292	28	1,234	4	15	1	482	1	6	37,948
Wis.	298	18	797	-	-	2	109	1	9	NA
W.N. Central	**1,203**	**82**	**2,663**	**4**	**28**	**2**	**610**	**38**	**2**	**18,210**
Minn.	56	2	201	1	2	-	140	1	1	NN
Iowa	75	6	235	1	8	1	66	-	-	4,197
Mo.	987	72	1,985	1	7	1	260	24	1	10,147
N. Dak.	-	-	1	-	1	-	10	1	-	48
S. Dak.	2	-	8	-	-	-	28	2	-	619
Nebr.	10	-	46	-	5	-	22	3	-	2
Kans.	73	2	187	1	5	-	84	7	-	3,197
S. Atlantic	**5,362**	**322**	**18,942**	**7**	**12**	**1**	**4,448**	**2**	**56**	**8,653**
Del.	27	5	138	-	-	-	57	-	1	2
Md.	325	9	1,538	1	-	-	363	1	14	NN
D.C.	170	28	967	-	-	-	121	-	1	16
Va.	796	18	1,919	2	1	-	372	-	9	2,844
W. Va.	8	2	179	-	-	-	80	-	-	5,650
N.C.	1,872	44	4,023	1	1	-	586	-	1	NN
S.C.	799	100	1,945	1	-	-	387	NN	-	135
Ga.	820	42	3,185	-	1	1	740	1	2	NN
Fla.	745	74	5,048	2	9	-	1,762	-	28	NN
E.S. Central	**3,997**	**144**	**9,992**	**-**	**8**	**-**	**1,578**	**3**	**6**	**4,701**
Ky.	208	13	534	-	2	-	347	2	1	984
Tenn.	1,044	57	2,978	-	2	-	520	-	3	3,717
Ala.	661	18	1,933	-	1	-	433	-	2	NN
Miss.	2,084	56	4,547	-	1	-	278	1	-	NN
W.S. Central	**4,124**	**355**	**16,275**	**15**	**2**	**-**	**3,500**	**27**	**17**	**16,159**
Ark.	446	29	1,326	-	-	-	264	23	-	NN
La.	1,608	87	5,422	2	-	-	433	1	4	NN
Okla.	157	15	497	1	2	-	261	3	3	NN
Tex.	1,913	224	9,028	12	-	-	2,542	-	10	16,159
Mountain	**242**	**23**	**1,137**	**2**	**12**	**4**	**654**	**9**	**13**	**7,286**
Mont.	3	-	9	-	-	-	24	3	-	53
Idaho	2	-	10	-	3	-	13	-	-	NN
Wyo.	-	-	3	-	-	2	12	-	-	NN
Colo.	126	4	296	1	6	1	94	1	3	NN
N. Mex.	18	-	178	-	-	-	81	1	1	NN
Ariz.	50	16	419	-	1	-	249	-	4	6,783
Utah	12	-	51	1	2	-	55	2	2	450
Nev.	31	3	171	-	-	1	126	2	3	NN
Pacific	**872**	**197**	**7,765**	**6**	**54**	**18**	**5,628**	**8**	**133**	**1,224**
Wash.	36	3	281	1	7	-	264	1	12	NN
Oreg.	22	-	100	-	-	-	165	4	5	NN
Calif.	807	194	7,321	5	43	12	4,859	2	111	NN
Alaska	3	-	22	-	-	4	93	1	-	NN
Hawaii	4	-	41	-	4	-	247	-	5	1,224
Guam	2	-	7	-	-	-	21	-	1	952
P.R.	311	20	2,018	2	-	-	274	-	-	9,193
V.I.	7	-	30	-	-	-	10	-	-	551
C.N.M.I.	-	-	-	-	-	-	14	-	1	121
American Samoa	-	-	-	-	-	-	5	-	1	74

*Cases updated through Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, as of February 28, 1995.

NA: Not available
NN: Not notifiable

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format and on a paid subscription basis for paper copy. To receive an electronic copy on Friday of each week, send an e-mail message to *lists@list.cdc.gov*. The body content should read *subscribe mmwr-toc*. Electronic copy also is available from CDC's World-Wide Web server at *http://www.cdc.gov/* or from CDC's file transfer protocol server at *ftp.cdc.gov*. To subscribe for paper copy, contact Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to: Editor, *MMWR* Series, Mailstop C-08, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone (404) 332-4555.

All material in the *MMWR* Series is in the public domain and may be used and reprinted without permission; citation as to source, however, is appreciated.

Director, Centers for Disease Control and Prevention
David Satcher, M.D., Ph.D.
Deputy Director, Centers for Disease Control and Prevention
Claire V. Broome, M.D.
Director, Epidemiology Program Office
Stephen B. Thacker, M.D., M.Sc.

Editor, *MMWR* Series
Richard A. Goodman, M.D., M.P.H.
Managing Editor, *MMWR* (weekly)
Karen L. Foster, M.A.
Writers-Editors, *MMWR* (weekly)
David C. Johnson
Darlene D. Rumph-Person
Caran R. Wilbanks

☆U.S. Government Printing Office: 1995-633-175/05086 Region IV

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention (CDC)
Atlanta, Georgia 30333

Official Business
Penalty for Private Use $300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
PHS/CDC
Permit No. G-284

9502 93036 MMWR950713 0001
UNIVERSITY MICROFILMS
SERIALS ACQUISITION DEPT
300 NORTH ZEEB ROAD
ANN ARBOR MI 48103-1553

HHS Publication No. (CDC) 95-8017 Redistribution using permit imprint is illegal.